Fact Sheet

Performance Verification of Ship Ballast Water Treatment Technologies

The EPA's Environmental Technology Verification Program (ETV) and the U.S. Coast Guard's National Ballast Water Management Program are participating in a joint effort to develop a performance verification protocol for new ballast water treatment technology for installation on board ships.

Background: The overwhelming majority of the world's trade goods are transported by modern shipping. An unintended consequence of this vital mode of commerce is the uptake and transport of marine organisms in ship's ballast water, and the deposition of these organisms during ballast water discharge into non-native, and ecologically sensitive coastal areas. Although many organisms don't survive the journey or the introduction into new environments, some species flourish in their new environments without natural predators. The more environmentally tolerant species become invasive and can alter the ecological balance. Invasive species can cause habitat damage, and may cause public health concerns and significant damage to water treatment infrastructure as evidenced by the Zebra mussel infestation of the Great Lakes.

Project Description: Recent advances in establishing both national and international discharge standards for ship ballast water to reduce the global proliferation of aquatic invasive species has encouraged private industry to develop treatment technologies to address the proposed standards**.** Recognizing the need for these technologies to be independently evaluated and verified, and to accelerate commercialization and marketplace acceptance, the EPA and the U.S. Coast Guard are jointly developing a protocol for the performance verification of shipboard ballast water treatment technologies. The protocol is designed for use at a land-based testing facility, and will accommodate full-scale marine systems for either in-tank, flow-though, or combination treatment approaches. Water quality conditions for the tests will be adjusted to represent extreme, but not rare, natural conditions. In addition to ambient organism populations, surrogate organisms will be selected to represent bacteria, zooplankton, protists, and phytoplankton species. The protocol will be pilot-tested at the Naval Research Laboratory's (NRL) Ballast Water Treatment Technology Testing Facility at Key West, Florida, which was developed under a Coast Guard Agreement with NRL using the draft protocol's testing specifications.

Goal: The goal of this project is to develop and demonstrate a comprehensive, yet cost- effective technology verification protocol that can be used to evaluate new and innovative ballast water treatment technology in a fair and reproducible manner, independent of geographic location.

Results: When completed in 2007, the verification protocol will enable the evaluation of new technology, independent of the manufacturer, at any compatible testing facility worldwide. Purchasers of new ballast water treatment technology will be able to select appropriate systems based on credible data. Use of these systems on board commercial ocean vessels will ultimately contribute to reducing the proliferation of aquatic invasive species worldwide.

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